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Distributional, Biological and Taxonomic Notes on North American Buprestidae (Coleoptera)

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Abstract

Distributional, biological and taxonomic data are provided for 64 species of Buprestidae belonging to the genera *Acmaeodera*, *Acmaeoderoides*, *Actenodes*, *Agaeocera*, *Agrilus*, *Buprestis*, *Chrysophana*, *Descarpentriesina*, *Dicerca*, *Hippomelas*, *Melanophila*, *Pachyschelus*, *Polycesta*, *Ptosima*, *Spectralia*, *Taphrocerus*, *Trachykele* and *Tyndaris*. Forty-six of these species are recorded for the first time from a state or province, and new larval host records are provided for 15 others. *Taphrocerus sulcifrons* Fisher is recorded from the U.S. for the first time. Evidence is given to eliminate the recorded occurrence of *Agrilus arbuti* Fisher in British Columbia and *Ptosima walshii* LeConte in California.

Introduction

Data provided herein largely resulted from my determinations and collecting during recent years, and are presented to vouch their inclusion in the U.S. Department of Agriculture/Smithsonian Institution Catalog of Coleoptera (G. H. Nelson, in prep.). Genera and species are arranged alphabetically. Records with the state/province given in **BOLD CAPITALS** are presumed new. Host records include adults taken on a plant or reared/cut from their hosts, as indicated, and are presumed new unless marked with an asterisk (*) or otherwise clarified.

Collection codens are as listed in Arnett and Samuelson (1986) unless otherwise indicated and refer to all data preceding them. WFBC = W. F. Barr Collection. I wish to thank individuals and curators of the institutions mentioned for the opportunity to examine material in their

care. Appreciation goes to L. H. Herman and A. F. Newton for the loan of type material, and to G. H. Nelson for reviewing the manuscript. I am especially indebted to my son, Derek, without whose help I could not have generated this paper on our computer. His patience with "the old man" is commendable.

Acmaeodera connexa LeConte. Apparently the only specifically recorded Washington locality for this species is "Seattle" (Barr, 1971), an unlikely habitat. Since it is based on a specimen (OSUC) originating from the O. B. Johnson Collection it is further suspect. I am not aware of any other specimens of this species, the known hosts of which are oaks, from western Washington. In western Oregon it is occasionally collected as far north as Polk and Yamhill Cos. The following have been collected in **Washington** east of the Cascades: Yakima Co., Tieton, 31-V-35; Klickitat Co., White Salmon, 12-VIII-13, OSUC, and Satus Pass, 6-VI/30-VII-69, RLWE. This beetle is common in California and SW Oregon.

Acmaeodera conoidea Fall. **NEW MEXICO**, Eddy Co., 16 km SSW Whites City, 1140m, 12-V-89, RLWE. Chamberlin's (1926) record from **Texas**, El Paso, may be doubted; however, specimens are known from Jeff Davis Co., Davis Mts., Limpia Canyon, (17-20)-VI-61; Pecos Co., 29 mi S Ft. Stockton, 24-V-80, RLWE; Val Verde Co., 42 mi W Del Rio, 22-VI-65, on *Diospyros texana* Scheele, GHNC.

Acmaeodera constricticollis Knull. This species has been known only from the holotype collected at Phoenix, Arizona, but may be

confused in collections under its sibling, *A. fisheri* Cazier. Knull (1937) related it to *A. cribricollis* Horn, to which it bears no resemblance. **CALIFORNIA**, Imperial Co., Winterhaven, 5-VII-64, 3-VII-66; 1.5 mi W Winterhaven, 17-VI-80. Riverside Co., Coachella, 16-VI-63, 12-VI-78, 30-VI-88; 6 mi S Mecca, 30-VI-88; Thermal, 16-VI-63, all from flowers of *Pluchea sericea* (Nutt.) Cov., CLBC, DSVC, GHNC, RLWE. Specimens were reared from *Atriplex canescens* (Pursh) Nuttall, Arizona, Yuma Co., Colorado River, Yuma, WFBC.

Acmaeodera diffusa Barr. **NEW MEXICO**, Raton, 17-VI-35, MCZC.

Acmaeodera fisheri Fall. Reared from pupa ex *Fouquieria splendens* Engelmann, Texas, Val Verde Co., Seminole Can. St. Park, 23-VII-90, D.W. Sundberg Coll. No larval host for this beetle had been recorded, nor am I aware of any other *Acmaeodera* species which utilizes ocotillo.

Acmaeodera fisheri Cazier. Reared from *Eriogonum inflatum* Torr. & Frem. collected in California, Imperial Co., Mt. Springs and Borrego, V-79, em. V & VI-79, BKDC.

Acmaeodera immaculata Horn. **MONTANA**, Madison Co., 52 mi S Ennis, VII-66; Rosebud Co., 9 mi N Lame Deer, 8-VII-65, MTEC. **WYOMING**, Carbon Co., Hanna, Seminole Coal Mine #1, 22-VII-76; Park Co., 16 mi SE Powell, 22-VI-82, ESUW. According to R. Lavigne (in litt.), at the latter locality there were hundreds of beetles flying to painted (orange) stakes, yellow corn cob grit bait, flowers of *Opuntia polyacantha* Haw.* and *Sarcobatus vermiculatus* (Hook.) Torr. They were observed from noon to 3 p.m., the air temperature was about 92° F., and mating took place almost immediately as the beetles congregated at the foregoing sites.

Acmaeodera labyrinthica Fall. Cut from *Umbellularia californica* (H.&A.) Nutt., California, Napa Co., Mt. St. Helena, 27-III-79, CJSC.

Acmaeodera latiflava latiflava Fall. **NEVADA**, Clark Co., Grand Gulch Road, 22 air mi S. Mesquite, 11/21-V-83, EMUS; Spring Mts., Lee Can., 1 mi W Hwy. 95, 16-VI-82, *Fallugia paradoxa* (D. Don) Endl. blossom, GHNC.

Acmaeodera ligulata Cazier. **UTAH**, Washington Co., Gunlock St. Beach, 17-V-84, EMUS.

Acmaeodera neoneglecta Fisher. Rearing records from Texas are ex *Leucaena pulverulenta* (Schlecht) Benth., Texas, Cameron Co., Palm Grove Sanctuary near Brownsville, em. V-79, FTHC; ex *Sophora secundiflora* (Gomez Ortega) Lag. ex DC., Real Co., 11 mi NW Leakey, em III-90; ex *Ulmus crassifolia* Nutt., Hidalgo Co., Anzalduas Park, wood coll. IX-88, em. IV-89, D.J. Heffern Coll.

Acmaeodera paradisjuncta Knull. **NEW MEXICO**, Eddy Co., Sitting Bull Falls, 22-VIII-85, BYUC.

Acmaeodera pletura Barr. **UTAH**, Garfield Co., Calf Cr., 24-V-81, EMUS; 13 mi NE Escalante, 17-VI-84, CUIC. Zion Nat. Park, Watchman Trail, 31-V-82, RLWE. These specimens differ from paratypes in my collection by having the punctures of the head coarser and almost reticulate, those of the pronotum slightly coarser, and by exhibiting an indistinct subapical plate on the last visible abdominal sternite.

Acmaeodera pulchella (Herbst). **NORTH DAKOTA**, McKenzie Co., Theo. Roosevelt Mem. Park, 24-VI-64; Pembina Co., 12-VII-62, RLWE. **WYOMING**, Crook Co., Devils Tower Nat. Mon., 4000', 23-VI-83, RLWE, ESUW. Chamberlin (1926) recorded it from "**Montana**" based on a specimen in the Liebeck Collection (MCZC) which I have examined and found comparable to specimens from Carter Co., 5 mi W Alzada, oak forest, 20-VI-31/VIII-89; Fergus Co., Spring Cr., 9 mi NW Lewistown, 2-VII-88, MTEC. These specimens well match forms that occur over much of the eastern U.S. The Fergus Co. record is the westernmost known to me for this species and is about 460 km distant from any other. Chamberlin also listed *A. pulchella* from

Wyoming, Medicine Bow [Carbon Co.](as "var. *mixta* Horn", which was accorded species status by Barr, 1975); however, it is more likely that he was referring to *A. immaculata* (q.v.). These species belong to a complex, members of which occur practically throughout the U.S. and adjacent Canada and Mexico. They are greatly in need of study.

Acmaeodera quadrivittata Horn. Reared from *Yucca schidigera* Roezl ex Ortgies, California, San Bernardino Co., Cedar Canyon Summit, 5400', 10-XI-74, CSLB.

Acmaeodera sphaeralceae Barr. Specimens closely matching some from the type locality have been seen from **CALIFORNIA**, San Bernardino Co., Mid Hills, 4600-5000', Sec. 14 & 15, T12N, R14E, 8-V-78; Willow Wash, 2850', Sec. 33, T13N, R11E, 27-IV-80; Granite Mts., 3300', Sec. 25, T9N, R12E, 30-IV-76, EMUS; Pinyon Hills, Hwy. 138, 28-III-86, GHNC. **NEVADA**, Clark Co., Spring Mts., Lee Can., 10 mi W Hwy. 95, 22-V-83, on flower *Sphaeralcea* sp.*; Newberry Mts., Grapevine Can., N of Hwy. 71, 16-VI-81, on flower *Encelia farinosa* Gray, GHNC.

Acmaeodera tuta Horn. Overwintering adult taken from pupal cell in *Dalea schottii* Torr., California, Riverside Co., Pinyon Crest (Hwy.74), 3800', 29-XII-82, FTHC.

Acmaeoderoides humeralis (Cazier). **ARIZONA**, [La Paz Co.], 18 mi SE Parker, 22-V-70; Pinal Co., 1 mi N Florence, 7-IV-72, JJMD, RLWE. Besides a single specimen recorded from SW Texas, this species has been known only from southern California.

Actenodes calcarata (Chevrolat). **LOUISIANA**, Cameron Parrish, 12-VI-75, LSUC.

Actenodes davidi Nelson. **KANSAS**, Woodson Co., vic. Piqua, em. V-89 ex limbs *Gleditsia triacanthos* L. coll. XI-88, RLWE. **KENTUCKY**, Fayette Co., Lexington, 28-VII-89, tanglefoot on *G. triacanthus*, SGWC.

Actenodes simi Fisher. Reared from *Ulmus crassifolia* Nutt. branch cut from live tree 20-XII-88, adults em. V-89, Texas, Jackson Co., below Lake Texana Dam, D. J. Heffern Coll., RLWE. I am unaware of any previously recorded host for this beetle.

Agaeocera gentilis gentilis (Horn). **CALIFORNIA**, "Cronese", 24-VI-48, CASC. I could not locate this on my maps except for Cronise Valley, a site shown on an old AAA map, and which may have been obliterated by the I-15 freeway. This is approximately 16 mi SW of Baker, San Bernardino Co. Nearby are the Cronese dry lakes.

Agrilus amelanchieri Knull. **BRITISH COLUMBIA**, Creston, 19-VIII-33, *Amelanchier alnifolia*, CNCI. **MANITOBA**, Whiteshell Prov. Park, Falcon Lake, 7-VI-80, RLWE. This is a new record for Canada. The specimen from British Columbia had been misidentified as *A. arbuti* Fisher (q.v.) by Bright and was recorded by him (1987) as that species. It also bears determination labels of Frost, who felt it was either *arbuti* or new (at the time, *amelanchieri* was undescribed). Bright (1987) included *A. crataegi* Frost from Alberta, probably based on Fisher (1928). I find these species difficult to distinguish and questionably distinct, and in light of the widely recorded western distribution of *A. amelanchieri*, the specimen(s) from Alberta should be reexamined.

Agrilus anxius Horn. **NEVADA**, Washoe Co., Reno, 27-IV-88, em. from ornamental birch, *Betula* sp.*, NVDA, RLWE. According to R. C. Bechtel, Nevada Department of Agriculture (pers. comm.), this destructive pest (known as the bronze birch borer) has not been observed in Nevada prior to this collection, and it appears to be localized in Reno.

Agrilus arbuti Fisher. This species was recorded from British Columbia by Bright (1987) based on a specimen I have examined and determined to be *A. amelanchieri* Knull (q.v.). I have not seen specimens of *A. arbuti*

collected north of southwestern Oregon. It remains unknown from Canada.

Agrilus aurichalceus Redtenbacher. **MONTANA**, Wheatland Co., Deadman's Basin St. Rec. Area, 15-VI-82, RLWE.

Agrilus cercidii Knull. **NEW MEXICO**, Hidalgo Co., Peloncillo Mts., Granite Gap, 26-V-88, on *Prosopis* sp., WFBC.

Agrilus cliftoni Knull. **NEW YORK**, Livingston Co., Letchworth St. Park, (18-21)-VI-82, CUIC. Knull (1941) described this species, from a unique male, as without a metatibial mucro; however, I discovered that specimens determined as *A. cliftoni* in my collection bore metatibial mucros, a fact substantiated by G. H. Nelson (in litt.) for those in his collection. Al Newton (FMNH) examined the holotype and found that it too bears these mucros. Therefore, *A. cliftoni* will not key in Fisher (1928) to *A. arcuatus* (Say), as stated by Knull, but to *A. geminatus* (Say). Although the male genitalia should be used for reliable separation, *A. cliftoni* seems to be a larger species utilizing walnut, while the hosts for *A. geminatus* are oaks. The female of *A. cliftoni* was described by Nelson (1980).

Agrilus cyanescens (Ratzeburg). **UTAH**, Salt Lake City, 20-V-78, EMUS. Adults were taken on *Symphoricarpos orbiculatus* Moench, Missouri, Jefferson Co., 14-V, EGRC, GHNC. This is an introduced species and was first reported about 1920, though it may have been widespread at that time. Honeysuckle has been reported as a host in the U.S.; other plants in Europe. Since *Symphoricarpos* is in the same family, that genus probably serves as a larval host. The beetle's occurrence in Utah undoubtedly represents a secondary introduction from east of the Rocky Mountains, likely in infested nursery stock.

Agrilus difficilis Gory. **UTAH**, Cache Co., Logan, 1976;9-IX-81; 24/27-VIII-83; Salt Lake Co., Salt Lake City, 1-IX-83, all on honey locust, EMUS. Specimens were reared from honey

locust firewood from Logan, VIII-84, RLWE. According to Wilford J. Hanson (in litt.), "honey locust" probably refers to one of the thornless varieties of *Gleditsia triacanthos* L.*, which are popular shade trees in Utah and elsewhere. During VIII-86, I observed considerable damage from *A. difficilis* to these trees in Logan. Like the foregoing species, it probably was imported on nursery stock to Utah. The nearest recorded locality is in far eastern Colorado (Cheyenne Wells).

Agrilus gibbicollis Fall. **KANSAS**, Meade Co., 30-VI-86, D. J. Heffern Coll. **MONTANA**, Rosebud Co., Forsyth, 20-VI-56, MTEC.

Agrilus granulatus liragus Barter & Brown. The only record of this species from Oregon, Austin [Grant Co.], was provided by Barter & Brown (1949). Another specimen provides a notable range extension: Klamath Co., Upper Klamath Wildlife Refuge, 26-VI-74, OSUO. In the West, this species, like the closely related *A. anxius*, seems to be rarely collected in the field.

Agrilus illectus Fall. A notable northward range extension in California is provided by a specimen from Humboldt Co., 15 mi E Orick on Bald Hills Rd., 3-VII-75, UCDC. The elytral vittae and sides of pronotum are indistinctly pubescent.

Agrilus latifrons Waterhouse. **NEW MEXICO**, Otero Co., High Rolls, 13-VII-76, SDMC. This species, which is widespread in Mexico, has been known in the U.S. only from southern Arizona.

Agrilus nevadensis Horn. A specimen labeled "S.E. Or., VIII-12-17, COLL'D BY F.W. NUNENMACHER" (WFBC) represents the first record from **OREGON**. This rarely collected species was known definitely only by the type from western Nevada until Nelson (1980) recorded it from California. No host information has been published. Specimens from Meadow Valley, Plumas Co., California were beaten only from *Salix lasiandra* Benthams, 15-VII-78, BKDC; 8-VII-83, RLWE. Several species of

willow occur at this locality and all were beaten extensively.

Agrilus oblongus Fisher. **TEXAS**, Bandera Co., Bandera by Medina R., 29-III-86, RLWE.

Agrilus pensus Horn. **MINNESOTA**, Lake Co., 10 mi N Isabella, 6-VI-80, RLWE.

Agrilus quadriguttatus quadriguttatus Gory. **MONTANA**, Rosebud Co., Forsyth, 20-VI-56, MTEC.

Agrilus rubroniger Hespeneheide, 1979:479 (= *Agrilus cupricollis*: Fisher, 1928:42 [misidentification]). These literature citations are provided to clarify the discussion given by Hespeneheide (1979), as he designated *rubroniger* a "new name" and his citation "*A. cupricollis* Fisher . ." may be confusing. A misidentification, despite the fact an actual new species was involved, has no standing in nomenclature; therefore, *A. rubroniger* should have been designated a new species, which would then have been consistent with treatment of the type material.

Buprestis maculativentris Say. **WYOMING**, Crook Co., Devil's Tower Nat. Mon., ca. 4000', 26-VII-83, ESUW.

Buprestis maculipennis Gory. **WISCONSIN**, Monroe Co., 2.4 mi SW Mather, 6-VII-85, RLWE. Although it has been listed from **Texas**, I could not find a specific record. I have collected it from pine logs near Houston. More noteworthy is its occurrence on pinyon in west Texas, Jeff Davis Co., W base Sawtooth Mt., (26-29)-VI-79, FTHC.

Buprestis prospera Casey. **NEVADA**, Washoe Co., Reno, 7-X-53, NSDA, RLWE.

Buprestis sulcicollis (LeConte). **WISCONSIN**, Vilas Co., Sec.8, T41N, R7E, Trout Lake, 6-VI-64, RLWE.

Chrysophana placida (LeConte). **MONTANA**, Gallatin Co., Squaw Creek, 31-V; Sweet-

water Co., Crazy Mts., N of Big Timber, VIII-76, MTEC.

Descarpentriesina cyanipes (Say). **MONTANA**, Custer Co., 15 mi E Miles City, 30-VI-56, MTEC.

Descarpentriesina ferrea (Melsheimer). **SOUTH DAKOTA**, Pennington Co., Wasta Park, cut ex *Populus* sp.*, 24-VIII-66, FMBC in UIMC. Bright (1987) included **TEXAS** in the range for this species; however, since I have been unaware of any specific record of it from that state, substantiation is warranted: Tarrant Co., Fort Worth/Trinity River, 2-VII-79, RLWE.

Dicerca callosa callosa Casey. **WYOMING**, Crook Co., Devil's Tower Nat. Mon. ca. 4000', 18-VI-83, ESUW. On this specimen the width/length ratio of the 7th antennal segment is .95/1; of the pronotum, 1.70/1 (see Nelson, 1975). Nelson (1975) recorded *D. callosa frosti* Nelson from NW Wyoming, but his closest record for *D. c. callosa* was from northcentral North Dakota. However, Kirk & Balsbaugh (1975) listed the latter subspecies (det. by Nelson) from Lawrence Co., South Dakota, which is adjacent to Crook Co., Wyoming.

Dicerca pectorosa LeConte. **MONTANA**, Teton Co., Choteau, 28-VI-55, MTEC.

Hippomelas caelatus (LeConte). The following represents the westernmost record known to me: Arizona, Yuma Co., Organ Pipe Nat. Mon., 2 mi w campground, 28-X-78, W. B. Warner Coll.

Hippomelas carolinensis Horn. Reared from *Dalea emoryi* Gray, Arizona, Yuma Co., Foot-hills, wood coll. 26-V-80, em. (14-30)-VI-80, BKDC.

Hippomelas pacificus Chamberlin. Reared from roots of *Suaeda fruticosa* (L.)Forsk., California [Kings Co.], Hanford, VIII-61, CISC.

Melanophila abies Champlain & Knull. In the U.S. this species has been recorded only

from New Hampshire. **NEW YORK**, Essex Co., top Mt. Whiteface, 27-VI-41, CUIC.

Melanophila drummondi nicolayi Obenberger. Apparently recorded only from Michigan and New Hampshire, I have seen specimens from **NEW YORK**, Essex Co., Heart Lake, 13-VI-49; Clinton Co., Black Brook, 21-VI-15, CUIC.

Melanophila intrusa Horn. **MONTANA**, Treasure Co., 7 mi W Hysham, 19-VI-56, MTEC.

Melanophila lecontei Obenberger. **ARIZONA**, Coconino Co., Mogollon Mesa, Tonto Creek Can., 2300m, (16-20)-VIII-77, G.E. Ball, UASM; Yavapai Co., Mingus Mt., 7400', 20-VI-85, on *Abies* sp.*, RLWE. **MONTANA**, Fairy Lakes, 10-VIII-68, CUIC. **WYOMING**, Albany Co., N. Fk. L'il. Laramie R., N. Fk. Campground, 26-VII-78, ESUW.

Pachyschelus purpureus purpureus (Say). **WISCONSIN**, Madison, 16-V-34, WSUC.

Polycesta angulosa Duval. Reared from old wood of *Metopium toxiferum* (L.)Krug & Urban, Florida, Monroe Co., Key Largo, 2-V-79, FTHC, RLWE.

Polycesta cazieri Barr. No larval host plant has been recorded for this species: reared from *Adenostoma fasciculatum* Hooker & Arnott, California, San Diego Co., Barrett, wood coll. VI-81, em. VII-81, BKDC, RLWE.

Polycesta deserticola Barr. Adult cut from pupal chamber in *Pithecellobium flexicaule* (Benth.)Coul., Texas, Starr Co., Falcon Heights, 14-IV-90, D.J. Heffern coll.

Ptosima walshii LeConte. According to Nelson (1978) this species was recorded from California based on a specimen in the Coquillette Collection (USNM) from Los Angeles Co. He wrote, ". . . this state record is questionable and should be verified." I am convinced that it does not occur in California for three reasons:

1) All other records are for localities east of the 100th Meridian; 2) Coquillette was a prominent entomologist who lived in Illinois then moved to southern California (Essig, 1955), thus specimens collected in Illinois could have been confused or mislabeled; 3) The three other U.S. species of the genus are not known from west of central Texas. Given these criteria, the evidence that *P. walshii* does not occur in California appears irrefutable. **OKLAHOMA**, Bryan Co., 2 mi E Wade, 14-IV-88, beating *Quercus* sp.*, WFBC; Latimer Co., V-88, GHNC.

Spectralia gracilipes (Melsheimer). **LOUISIANA**, Baton Rouge, 6-V-73, LSUC. **OKLAHOMA**, Latimer Co., V-79/V-82, GHNC.

Taphrocerus sulcifrons Fisher. **ARIZONA**, Santa Cruz Co., Santa Rita Mts., Madera Canyon, (19-25)-VII-57; Patagonia Mts., 27-VII-57; **TEXAS**, San Patricio Co., Welder Wildlife Refuge, Gator Pond, 2-XII-73, RLWE. (NEW RECORD, USA).

Trachykele blondeli Marseul. **ARIZONA**, Coconino Co., Oak Creek Can., 4-IV-79, CJSC, cut ex *Cupressus glabra* Sudworth.

Tyndaris barberi (Skinner). Skinner (1903) listed specimens from dead "cat claw", which name has been applied to *Mimosa biuncifera* Benth. W. F. Barr and I collected over 50 specimens, including mating pairs, on that plant in Arizona, Maricopa Co., 5 mi N Sunflower, 21-VI-85. It was taken, probably incidentally, on *Quercus turbinella* Greene in Yavapai Co., Congress Jct., 28-VI-57, GHNC. Previously known only from central Arizona, Walters and Bellamy (1990) recorded *T. barberi* from California at a locality about 280 km distant from the nearest record to the east.

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